

**Environmental Assessment**  
**Proposed 230 kV Autobank Substation**  
**and Transmission Line**  
**Sloan Property**  
**Richland County, South Carolina**

Submitted to:

**South Carolina Electric & Gas Company**  
Power Delivery and Procurement Dept. MC 031  
Columbia, South Carolina 29218

Submitted by:

**General Engineering**  
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Submittal Date: May 3, 2001

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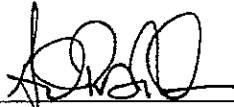
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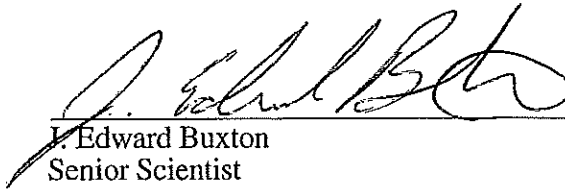
## Signature Page

This report, entitled "Environmental Assessment," has been prepared for the proposed 230 kV autobank substation and transmission line at the Sloan site near Killian in Richland County, South Carolina. It has been prepared at the request of and for the exclusive use of the South Carolina Electric & Gas Company by G. Ross Nelson. It has been prepared in accordance with accepted quality control practices and has been reviewed by the undersigned.

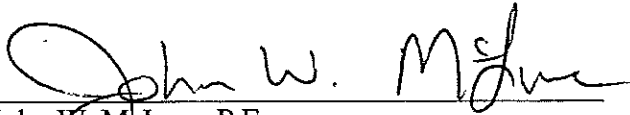
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5/3/2001  
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**Environmental Assessment**  
**Proposed 230 kV Autobank Substation**  
**and Transmission Line**  
**Killian Property**  
**Richland County, South Carolina**

**Executive Summary**

This Environmental Assessment (EA) addresses potential impacts associated with the proposed construction of a 230 kV autobank substation and transmission line on the South Carolina Electric & Gas Company's (SCE&G's) Sloan property near Killian in Richland County, South Carolina. Although a majority of the site will be cleared to accommodate the proposed substation, this project will not result in any significant environmental impacts.

The research and site inspection performed as part of this EA did not identify any occurrences of State or Federally listed threatened and endangered (T&E) species, any known, recorded archeological sites, or any jurisdictional wetlands, designated floodplains, or floodways on the subject site. Therefore, we do not anticipate that the construction of the proposed 230 kV substation and transmission line will result in any significant environmental impacts on jurisdictional wetlands, State or Federally listed T&E species, archeological or historical sites, or designated floodplains.

However, please note that there is a potential that future occurrences of T&E species could occur on the subject site since the list of species can be modified, and since populations can diversify over time in response to natural migration and habitat changes. Therefore, any future report of T&E species in the vicinity of the subject site should be thoroughly investigated. If any federal permits are required for construction of the substation, a Section 7 consultation with the United States Fish and Wildlife Service will be required. This consultation will be used to verify the presence or absence of T&E species on the subject site.

Additionally, the absence of archeological sites is likely due to the absence of professional investigations of the area rather than an actual absence of cultural resources. Therefore, if any archeological discoveries are made on the subject site in the future it will be necessary to report any findings to the State Historic Preservation Office in accordance with the applicable state regulations.

The construction of the proposed 230 kV substation and transmission line will result in the loss of approximately 8 acres of the southern mixed pine-oak community located at the subject site. However, this type of community is prominent not only on the surrounding properties, but also within the southeastern coastal plain. Therefore, the



**Environmental Assessment**  
**Proposed 230 kV Autobank Substation**  
**and Transmission Line**  
**Killian Property**  
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**Executive Summary (cont.)**

proposed project will not result in the significant loss of habitat that may be critical to T&E species or other natural and/or cultural resources. Additionally, construction of the substation and transmission line will be completed entirely on the subject site. Therefore, we do not anticipate that there will be any significant impact to the surrounding properties. No additional environmental assessment work of the subject property is recommended at this time.



**Environmental Assessment**  
**Proposed 230 kV Autobank Substation**  
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**Sloan Property**  
**Richland County, South Carolina**

**1.0 INTRODUCTION**

This report presents the results of an Environmental Assessment (EA) for construction of a proposed 230 kV autobank substation and transmission line on the South Carolina Electric & Gas Company's (SCE&G's) Sloan property near Killian in Richland County, South Carolina. The location of the subject site shown on Figure 1, an excerpt from the United States Geological Survey 7.5-minute quadrangle maps of Fort Jackson North and Blythewood, South Carolina.

Mr. Danny Hicks of SCE&G requested that General Engineering conduct an EA for the subject site. This EA was prepared to provide information to the South Carolina Public Service Commission on the potential environmental impact that the construction of one 230 kV substation and transmission line will have on the subject site and surrounding properties.

The new substation and transmission line will be located entirely on the 10.12-acre subject site. Approximately 8.0 acres of the site will be utilized for construction of the substation. The transmission line will tie in with the existing line that traverses the northern portion of the property along existing SCE&G Right-of-Way (ROW).

The EA consisted of the tasks listed below:

- Examination of available State and Federal records
- Interviews with the applicable State and Federal agencies
- Inspection of the subject site and surrounding properties

State and Federal records were reviewed to determine if any State or Federally listed Threatened and Endangered (T&E) species, known, recorded archeological or historical sites, jurisdictional wetlands, or designated floodplains have been identified on or in the vicinity of the subject site. Likewise, interviews were conducted with various State and Federal agency personnel to determine the presence of T&E species and archeological sites in the vicinity of the subject site. Thorough field surveys were conducted to determine the presence or absence of jurisdictional wetlands and State and Federally listed T&E species known to occur in the same geographic region as the subject site. This includes the



identification of available habitat on the subject site and surrounding properties to determine if it is considered suitable for listed T&E species. The findings of this assessment are presented below.

## **2.0 PROJECT NEED**

The proposed 230 kV substation and transmission line are necessary because of the increased load on the power supply throughout the northeastern Columbia area. Several scenarios have developed that could result in the interruption of the power supply to many of the industrial, commercial, and residential customers in the area. To alleviate these potential problems, SCE&G proposes construction of a 230 kV substation on the subject site. The new substation will provide increased service reliability for Blythewood, Sandhill, Greengate, and Woodfield Park. Additionally, construction of the substation will support increased loads in the Blythewood area.

## **3.0 PUBLIC INFORMATION REVIEW**

This phase of the assessment included an examination of available public documents and interviews with persons who may have additional information on jurisdictional wetlands, 100-year floodplains, archaeological and historical sites, and State and Federally listed T&E species in the vicinity of the subject corridor. The results of this research are discussed below.

### **3.1 Threatened and Endangered Species**

The United States Fish and Wildlife Service (USFWS) was contacted for information regarding Federally listed T&E species which may occur in the same geographic region as the subject corridor. The Charleston Office of the USFWS identified the bald eagle (*Haliaeetus leucocephalus*), red-cockaded woodpecker (*Picoides borealis*), rough-leaved loosestrife (*Lysimachia asperulifolia*), Canby's dropwort (*Oxypolis canbyi*), and the smooth coneflower (*Echinacea laevigata*) as potentially occurring in Richland County, South Carolina.

The South Carolina Department of Natural Resources' Heritage Trust Division (HTD) was contacted to obtain information regarding the presence or absence of State and Federally listed T&E species and species of concern in the vicinity of the subject corridor. According to data provided by HTD, there are no known, recorded occurrences of T&E species or species of concern on the subject site. However, the HTD identified Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) as a State endangered species which



potentially occurs in Richland County, South Carolina. In addition, HTD identified 72 additional species as being of state, regional, or national concern. Please note that the species of concern are not protected by either State or Federal regulations, and subsequently were not included as part of this investigation.

### **3.2 Archeological and Historic Sites**

The South Carolina Institute of Archeology and Anthropology (SCIAA) was contacted to determine if there are any known, recorded archeological sites on the subject site. Although no archeological sites were identified in the site files that are maintained by SCIAA, they cautioned that the absence of archeological sites is likely due to the absence of professional investigations of the area rather than an actual absence of cultural resources. Therefore, if any archeological discoveries are made on the subject site in the future it will be necessary to report any findings to the State Historic Preservation Office in accordance with the applicable state regulations.

### **3.3 Jurisdictional Wetlands**

The location of potential jurisdictional wetlands was determined by examining a National Wetlands Inventory (NWI) map for the Fort Jackson North, South Carolina quadrangle. The NWI map does not indicate the presence of any wetlands on the subject site. Please note that NWI maps are prepared using high altitude aerial photography. Therefore, field surveys are required to define the actual boundary of jurisdictional wetlands. Our site inspection confirmed there are not any areas on the subject site that meet the criteria outlined in the Corps of Engineers Delineation Manual, 1987. Therefore, there are no jurisdictional wetlands on the subject site. The attached Figure 2 shows the location of the subject site on an excerpt from the NWI map.

### **3.4 Floodplains**

The locations of floodways, the 100-year floodplain, and the 500-year floodplain were determined by examining a Richland County Flood Insurance Rate Map. This map, which is published by the National Flood Insurance Program, designates special flood hazard areas. The map does not depict any floodways or floodplains on the subject site. Therefore, there are no areas on the subject site that would be considered special flood hazard areas. The attached Figure 3 shows the location of the subject site on an excerpt of Community Panel 450170 0105G.





### **3.5 Interviews**

Three people were interviewed concerning their knowledge of State and Federally listed T&E species and archeological sites in the vicinity of the subject corridor. The persons interviewed are listed below.

- Ms. Paula Sisson, United States Fish and Wildlife Service (USFWS)
- Mr. Rob Harrison, South Carolina Department of Natural Resources – Office of Wildlife Diversity
- Ms. Valerie Marcil, Staff Archeologist, State Historic Preservation Office

Ms. Sisson provided General Engineering with the most recent copy of the South Carolina Distribution Records of Endangered, Threatened, Candidate, and Species of Concern. She stated that a thorough investigation of the site should be conducted to determine the presence of any Federally listed T&E species. Additionally, Ms. Sisson noted that a Section 7 consultation would be required by the USFWS if the construction of the proposed 230 kV substation and transmission line will require any Federal permits. This consultation will be used by the USFWS to verify the presence or absence of T&E species on the subject site.

Mr. Harrison was contacted regarding his knowledge of Rafinesque's big-eared bat. He stated that although the Rafinesque's big-eared bat is considered a State endangered species, it is not considered a species of concern by the USFWS because of the number of populations throughout the Southeast Region of the United States.

Ms. Marcil stated that she is unaware of any thorough archeological investigations of the subject site. Therefore, it is possible that artifacts may be located below the ground surface on the subject site. Ms. Marcil also stated that several archeological investigations have occurred around Crane Creek, within one mile of the subject site. These investigations have revealed the presence of some archeological artifacts. However, none of these sites have qualified for registration on the National Register of Historic Places. However, she did note the proximity of subject site to the floodplain across Farrow Road may indicate that the site contains some prehistoric and/or historic artifacts..

### **4.0 INSPECTION OF THE SUBJECT SITE**

The subject site is a 10.12-acre tract located between Sloan and Farrow Roads near Killian, South Carolina. A visual inspection of the subject site and surrounding properties was conducted by Mr. Ross Nelson of General Engineering on April 19, 2001. The



inspection consisted of walking the subject site and taking field notes on the vegetation, wildlife, waterbodies, and physical features that were encountered.

The site inspection revealed the presence of two distinct communities, a Southern mixed pine-oak community and a cleared right-of-way (ROW). A description of these communities is presented in Section 5.0. The adjacent properties were visually inspected from the subject site. Based on our visual inspection of the adjacent properties and a review of aerial photography, there is no indication that the available habitat located in these areas will differ significantly from the subject site. Please note that none of the adjacent properties will be impacted by the construction of the proposed 230kV substation and transmission line.

The subject site slopes from southeast to northwest with an elevation change of approximately 40 feet from the eastern property line to the railroad line located on the western edge of the property. The construction of the elevated railroad line created a small drainage way along the western property line. Surface runoff appears to flow from south to north along the base of the railroad during periods of heavy rainfall. Groundwater flow also appears to flow from southeast to northwest, possibly surfacing in the floodplain located to the west of Farrow Road and depicted on both Figures 2 and 3.

The Soil Survey of Richland County lists the soils at the subject site as Pelion loamy sand, 2 to 6 percent slopes. An examination of the top twenty inches of the soil verified the information presented in the Soil Survey. The top 2 inches of soil is dark gray loamy sand. The soil from 2 to 10 inches is light yellowish brown loamy sand. The remaining subsoil to twenty inches is pale yellow loamy sand. No groundwater was detected in the upper twenty inches of the soil. The presence of dry sandy soils is typical for the midlands area of South Carolina. Likewise, the habitat identified on the subject site is typical for these soils.

## **5.0 DESCRIPTION OF THE AVAILABLE HABITAT**

The available habitat on the subject site and surrounding forested properties were examined to determine if they are considered suitable for the State and Federally listed T&E species that are identified in Section 6.0. The habitat within the forested area and the cleared ROW is discussed in Section 5.1 and 5.2, respectively.

### **5.1 Southern Mixed Pine-Oak Community**

The vegetation on the subject site is dominated by Loblolly pine (*Pinus taeda*) and water oak (*Quercus nigra*). A few other oak species were identified on the subject site,



including southern red oak (*Quercus falcata*) and white oak (*Quercus alba*). These trees were present only in the shrub and sapling layer. Sparkleberry (*Vaccinium arboreum*) and common persimmon (*Diospyros virginiana*) are also present in the subcanopy. The herbaceous layer is dominated by muscadine (*Vitis rotundifolia*). Although the canopy layer on the subject site is dense, the subcanopy is sparse, resulting in a shaded-open area in the herbaceous and shrub layers of the subject site.

Loblolly pine is highly intolerant of shade and is easily outcompeted by oaks. Therefore, the shade created by the loblolly pine canopy prevents the growth of new loblolly saplings. However, oaks prefer to grow under these shaded conditions and, if left undisturbed, would eventually dominate the canopy as the loblolly dies of old age. The growth of oak and hardwoods in the seed source typically outpace the regeneration of Loblolly pine and result in a transition toward the Southern Mixed Hardwood community. Based on the density of the canopy and the absence of large pine trees which are suitable nesting sites, this community is not considered suitable habitat for the T&E species found in this geographic region of the state.

## **5.2 Cleared Right-of Way**

The subject site also contains an existing cleared ROW. Therefore, the available habitat has been maintained for decades in a shrub or grassy state by routine mowing and the selected application of herbicides. Trees are removed within the ROW because of the potential hazard they could pose if they were allowed to grow and mature in the vicinity of the transmission lines.

The majority of the cleared ROW is dominated by water oak saplings, broomstraw (*Andropogon virginicus*), reindeer moss (*Cladonia evansii*), and cactus (*Opuntia compressa*). The ground cover is typically 4 to 5 feet high and saplings or shrubs are typically less than 2 or 3 inches in diameter. Greenbrier (*Smilax* spp.) was also identified along the western portion of the ROW, near the base of the railroad tracks. In addition, based on the local topography and the aspect of specific areas to sunlight, various other species are present throughout the ROW.

The majority of the identified habitats within the cleared ROW and the adjacent forested communities are not considered suitable for the T&E species that are described in Section 6.0. Since no State or Federally listed T&E species were identified on the existing ROW, we do not anticipate that the construction of the proposed 230 kV substation and transmission line will affect T&E species.



## **6.0 THREATENED AND ENDANGERED SPECIES**

As noted previously, there are five Federally listed T&E species that are known or suspected to occur in Richland County, South Carolina. The following is a description of each of the T&E species and the habitat that is considered suitable for these species.

### **6.1 Bald Eagle**

The bald eagle is the largest bird of prey known to occur in South Carolina and has a wingspan of approximately 7 feet. The bald eagle typically constructs its nest near water since its diet is largely dependent upon fish and small waterfowl. In the southeast, the nesting period is during the winter months. Bald eagles typically construct their nest in large, live pine trees. The USFWS habitat management guidelines protect the nesting sites. The nests, which may be as large as 6 feet across, are typically visible from the ground surface. Although the majority of the subject site consists of large, live pine trees, the waterbodies (i.e. farm ponds and forested tributaries) in the vicinity of the subject site are not considered suitable for foraging by the bald eagle. Therefore, construction of the substation and transmission line will not result in the loss of suitable habitat for the bald eagle.

### **6.2 Red-Cockaded Woodpecker**

The red-cockaded woodpecker (RCW) is a small black and white bird that is approximately 7 inches long. The RCW may be identified by its large white cheek patch, the horizontal rows of white spots on its back, and its distinctive call. Adult males have a small red streak located above the cheek patch. The RCW is the only bird that constructs its nest inside live pine trees. The nests are located in pine trees (> 60 years old) that have developed red-heart disease or have soft heartwood. Trees that contain nesting cavities are easily recognized because the bark of the tree eventually becomes coated with sap. The RCW regularly pecks at the bark, which stimulates resin flow. The RCW requires extensive foraging habitat that is dominated by pine trees that are greater than 4 to 9 inches in diameter. The available habitat on the subject site is not considered suitable for the RCW since the loblolly pines appear to be less than 25 years old.

### **6.3 Rough-Leaved Loosestrife**

The rough-leaved loosestrife is a herbaceous perennial that grows from subsurface stems to a height of 1 to 2 feet. The leaves grow in whorls of 3 to 4 around a slender stalk. The yellow flowers are showy and grow on terminal stems along the upper 2 to 4 inches of



the plant. The loosestrife flowers from May to June and produces globe-shaped fruit from August to October. This plant prefers sandy, moist peat of pine flatwoods, savannahs, seep bogs, and pocosins. Since the subject site is located entirely on dry, sandy soils, there is no suitable habitat for the rough-leaved loosestrife. Therefore, construction of the substation and transmission line will not result in the loss of suitable habitat for this species.

#### **6.4 Canby's Dropwort**

Canby's dropwort is a perennial plant that stands approximately 60 inches tall with a smooth, erect stem arising from buds at the tips of the previous year's underground stem. It has quill-like leaves and umbellate flowers with short, white petals. Canby's dropwort is primarily found in South Carolina in pond-cypress savannahs in Carolina Bay formations dominated by grasses or sedges or ditches next to the bays. They also prefer open bays or ponds that are wet most of the year and have little to no canopy cover. Due to absence of pond-cypress savannahs on the subject site, suitable habitat for Canby's dropwort is not available.

#### **6.5 Smooth Coneflower**

The smooth coneflower is a tall, perennial flower which occurs in open areas on dry sandy soils. The upright stem, which is typically between 2 and 3 feet tall, appears in the spring and persists until late fall. The leaves are alternately arranged on the lower portion of the stem and may be more than 1 foot in length. The flowering head is cone shaped with an outer fringe of pale purple rays and appears in summer. The smooth coneflower prefers basic soils associated with sparsely forested upland oak-hickory or mixed oak-pine communities. Black jack oak, wild quinine, little bluestem, and rattlesnake master are considered indicator species in South Carolina. The sparse canopy necessary for the smooth coneflower to persist is typically the result of frequent burning or cattle grazing. These openings commonly contain a highly diverse collection of members of the pea and aster families. Although the clearing of the ROW has created an opening where smooth coneflower could exist, neither the indicator species nor the plant diversity that is typical associated smooth coneflower habitat were identified within the ROW.

### **7.0 CONCLUSIONS AND RECOMMENDATIONS**

The research and site inspection performed as part of this EA did not identify any occurrences of State or Federally listed T&E species, known, recorded archeological sites, jurisdictional wetlands, designated floodplains, or floodways on the subject site. Therefore,



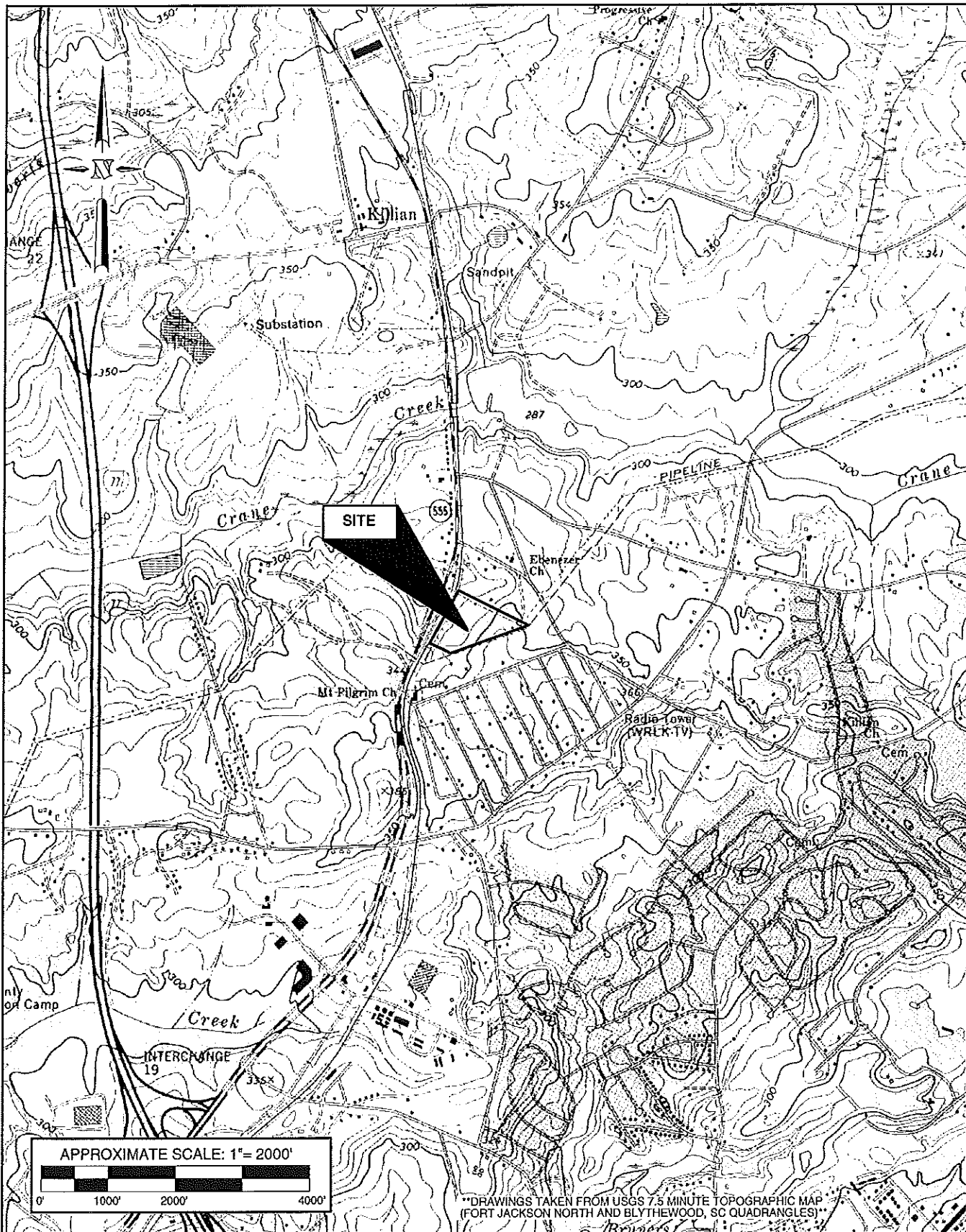
we do not anticipate that the construction of the proposed 230 kV substation and transmission line will result in any significant environmental impacts on jurisdictional wetlands, State or Federally listed T&E species, archeological or historical sites, or designated floodplains.

However, please note that there is a potential that future occurrences of T&E species could occur on the subject site since the list of species can be modified, and since populations can diversify over time in response to natural migration and habitat changes. Therefore, any future report of T&E species in the vicinity of the subject site should be thoroughly investigated. Likewise, the absence of archeological sites is likely due to the absence of professional investigations of the area rather than an actual absence of cultural resources. Therefore, if any archeological discoveries are made on the subject site in the future it will be necessary to report any findings to the State Historic Preservation Office in accordance with the applicable state regulations.

The majority of the impacts caused by construction of the proposed 230 kV substation and transmission line will result in the clearing of approximately 8 acres of Southern mixed pine-oak community. However, these communities are common in the midlands of South Carolina and throughout the southeastern coastal plain. Therefore, the fauna disturbed during construction of the substation and transmission line will have significant habitat available in around the area surrounding the substation.

Once the site is cleared, a portion of the site will be leveled to provide a suitable area on which to construct the substation. The typical depth to groundwater for Pelion soils is approximately 24 to 30 inches. Therefore, leveling of the site may result in some minor changes to groundwater flow. However, these changes should not have very little affect on groundwater flow on the surrounding properties. Additionally, construction of the substation and transmission line will occur entirely on the subject site. Therefore, we do not anticipate that there will be any significant impact to the surrounding properties. No additional environmental assessment work of the subject property is recommended at this time.





# **GENERAL ENGINEERING**

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PROJECT: sceg01401c

ENVIRONMENTAL ASSESSMENT  
PROPOSED 230KV SUBSTATION  
AND TRANSMISSION LINE  
SLOAN PROPERTY  
RICHLAND COUNTY, SOUTH CAROLINA

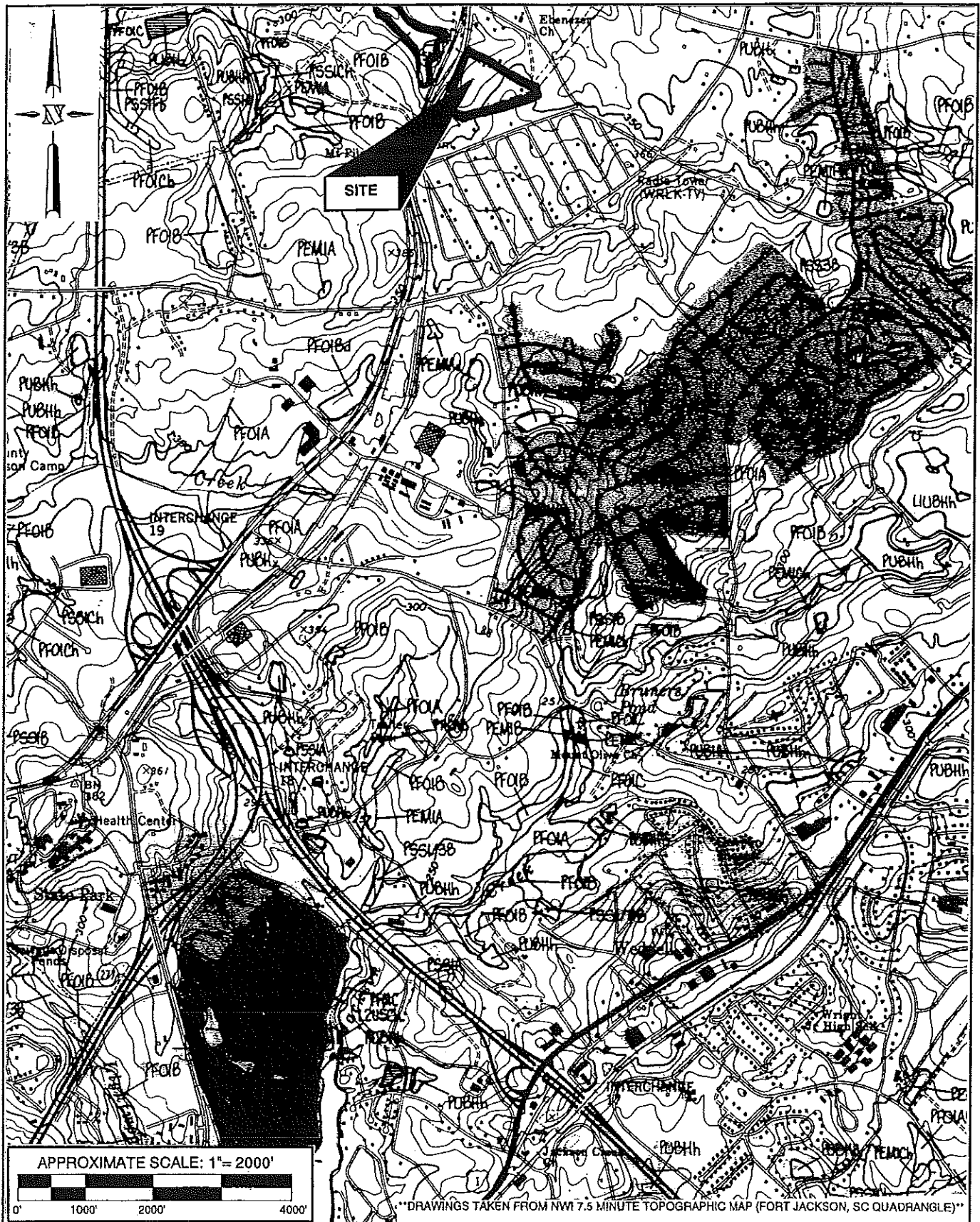
DATE: April 28, 2001

SITE LOCATION MAP  
USGS TOPOGRAPHIC MAP

DRAWN BY: TJP

APPRV. BY: GRN

FIGURE  
1



# **GENERAL ENGINEERING**

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PROJECT: scag01401e

ENVIRONMENTAL ASSESSMENT  
PROPOSED 230KV SUBSTATION  
AND TRANSMISSION LINE  
SLOAN PROPERTY  
RICHLAND COUNTY, SOUTH CAROLINA

DATE: April 26, 2001

SITE LOCATION MAP  
NATIONAL WETLANDS  
INVENTORY MAP

FIGURE  
2

DRAWN BY: TJP APPRV. BY: GRN



